

Research & Issues in Music Education

Volume 7

Number 1 *Research & Issues in Music Education*, v.7,
2009

Article 6

2009

Engaging Music and Media: Technology as a Universal Language

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Recommended Citation

Carruthers, Glen (2009) "Engaging Music and Media: Technology as a Universal Language," *Research & Issues in Music Education*: Vol. 7 : No. 1 , Article 6.
Available at: <http://ir.stthomas.edu/rime/vol7/iss1/6>

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Abstract

The ambiguity in the first half of the paper's title – "Engaging music and media" – is intentional. Music is engaging in the sense that it implicates our hearts and minds. Music can also be engaged by and with media. And, of course, engagement is core to effective learning.

The role of music education is always in flux. Aesthetic aims sometimes take primacy, while at other times music is taught as a means to some other end. As in ancient times, today music is taught largely for its ancillary benefits so that, in a curious twist, ancillary aims have become central and aesthetic aims have become ancillary to the study of music.

There is another dimension to this discussion – now more relevant than ever – that I'll frame interrogatively. Where do media and new technology posit music learning along the aesthetic/ancillary continuum? Does technology aid teachers in realizing primarily musical or extra-musical goals? The simple answer is that it does both, but the reality is more richly layered than this. In fact, these questions raise wider issues concerning the relevance of music education in a technologically driven world.

The present paper builds on my previous research on lifelong learning, diverse learner populations and community music, by considering music learning of all sorts in light of Jacques Ellul's statement that "[Technology] is, of necessity, ... our universal language" (The technological society, 1954, p. 132).

technology: the infinite development of the opposable thumb in the human head. – Arrigo Lora-Totino, Pertinent Points.

The ambiguity in the first half of the paper's title – "Engaging music and media" – is intentional. Music is engaging in the sense that it implicates our hearts and minds. Media can be engaging because it fascinates and even transfixes us. Music can be engaged by and with media. Media can be engaged by and with music. And, of course, engagement is core to effective learning.

The word "media" in the paper's title, and the word "technology" throughout the paper, is employed inclusively and expansively, to embrace software and internet technologies, but also all other technologies old and new. Media, technology, and media technology encompass learning and teaching modalities assisted in any way and to any extent by machinery or equipment, no matter how simple or complex.

Context

I have no special background in music education technology, but I have in recent years written on post-secondary music education, community music, lifelong learning, and the continuum of home, school, community and post-secondary music learning. The present discussion places observations from these papers and elsewhere against a backdrop of new media and technology. Frequent reference is made to Ursula Franklin, the brilliant Canadian scientist and humanitarian whose six-part lecture series, *The Real World of Technology*, was broadcast nationally in Canada in 1989 and published the following year. Franklin has a great deal of interest in technology's role in society. I have a great deal of interest in music's role in society. By relating her work to mine, and vice-versa, interesting questions about music education technology emerge, although I am the first to admit that these questions, in a short article like this one, will remain mostly unanswered.

As the call for papers of the 2007 EAS Congress states, “music activities are not only about music itself, but to a large extent about social interaction, myths, values [and] social structures.”¹ The same could be said of technology. David Elliot believes that musical works themselves “can be expressive of many kinds of meanings, including moral, didactic, iconic, political, religious or personal meanings” (1995, p. 125). The same could be said of technology. What happens when music and technology interact? Do they enhance one another, do they cancel each other out, or does something new and unknown emerge from the confluence of two strong and pervasive forces?

Purposes of Music Teaching and Learning

Music education has focused at various points throughout history on goals that are seemingly ancillary, adjunct or even irrelevant to music. Focussing on these goals may concomitantly strengthen or jeopardize music learning. When students are meant to learn about citizenship by playing together in a band the musical product may suffer. In an effort to be inclusive, weak players may participate alongside strong players. The weak players may be inspired to play better and the strong players may grow by mentoring the weak players, but the music would probably sound better if the weak players were excluded in the first place.

The same dichotomy appertains when music is used as a means to achieve academic ends. Music learning itself may be compromised. Elliott is convinced that, the most effective way to achieve any adjunct benefits of music education is to concentrate on the primary aims of music teaching and learning. Attempts to divert music education from its primary musical aims in the hope of advancing or integrating specific academic skills will only block the development of musicianship and, therefore, negate the possibility of achieving any results that may transfer across domains. (1995, p. 131)

Elliott may well be right, but this does not change the fact that, over the centuries, the focus of music education has changed frequently and dramatically. Music is sometimes an end in itself, while at other times it is taught and learned as a means to some other end (Mark, 2002; Carruthers, 2008). Many of the benefits of music study, some of which are imbedded in the art form itself – again, a point made by Elliott – are intended by teachers and curriculum planners while others are not (Carruthers, 2008). Either way, I agree that music learning is about many things that are not evidently or exclusively musical.

I am referencing a very complex matter that involves everything from the so-called Mozart factor – music makes you smarter – to multi-literacies and the empowering of marginalized peoples through music. Suffice it to say that much of the advocacy literature on music education strays quickly and widely from music. Within school systems, this is necessary since, “in the aesthetic view, a truly musical experience serves no practical purpose” (Elliott, 1995, p. 124). Including in the curriculum a subject with “no practical purpose” would be untenable to most school principals, administrators, parents and boards.

A remarkable piece of propaganda in the guise of advocacy is a publication of the Neil A. Kjos

Music Company, Why music is basic: The value of music education (Pearson, n.d.). It is obviously in the company's interests that school music remains valued, since its bread and butter is supplying materials to school music programs. What the editor has done is to bring together many arguments for the study of music in schools that teachers can use when defending their programs. We glean from this publication that music learning is intrinsically worthwhile, but that it also transmits cultural heritage, develops a unique kind of intelligence, is an outlet for creativity and self-expression, enables us to express our noblest thoughts and feelings, expresses our uniqueness, keeps students in school, sharpens perception, encourages appreciation of ambiguity and subjectivity, replicates life more accurately than other disciplines, is spiritually nourishing, exalts the human spirit, enhances quality of life, is basic to learning, is a unique way of knowing, is an essential balance to academic learning, heightens feeling, encourages "feelingful" intelligence and holistic thinking, builds self-esteem and self-image, increases reading skills, language skills, foreign language skills and mathematical skills, increases overall academic achievement, enhances creativity, increases self-awareness, pride and satisfaction, improves social skills, promotes trust and co-operation, is an emotional and social outlet, enhances perception-motor development, enhances psychomotor development, and helps students get into medical school!

Uses of Technology

To determine how educational technology articulates with this complex outcomes matrix, we might try to establish the veracity of each of these claims and then assess whether technology helps, hinders or replaces music as a means of achieving them. However, such a linear approach would miss the point, since it addresses only uses and not meanings of technology. Because uses and meanings of cultural artefacts are interwoven, they must be considered in tandem. To this end, it is helpful to review the uses of technology generally before posing questions about the meanings of music education technology specifically.

The literature on the uses of technology – I am speaking of everything from the wheel, to the crumhorn, to the personal computer – is vast, but can be distilled into four main points.

Technology enables us:

- 1) to do things more easily than we have done them before;
- 2) to do things better than we have done them before;
- 3) to do things we have not done before;
- 4) to think differently, whether we are actually doing anything differently or not.

In Kiesler's terminology, 1 and 2 are amplicative – having to do with quantitative measures – while 3 and 4 are transformative – having to do with qualitative measures (1992). In the first three instances technology is a tool that facilitates doing, while in the fourth instance technology is a message that transforms thinking. It is to the second of technology's transformative outcomes that we will return near the end of this article.

By considering the lowly telephone and some hypothetical examples of developments made possible by it, the distinctions between outcomes 1 to 4 will become clear.

1) I always talked with my younger sister on the other side of town, but a telephone has made this easier to do. Formerly, my sister travelled to me or I travelled to her and now we just pick up the telephone. This does not necessarily result in better communication, but it certainly results in easier communication.

2) Because of more frequent communication, my younger sister and I have grown closer. We are able to talk more meaningfully about things that matter to us. The result is not only easier, but also better communication.

3) I rarely talked with my older sister in Malaysia, but I do now that I have a telephone. This in itself is neither good nor bad, but it is different.

4) In talking regularly with both my sisters our family has been strengthened. Technology's message, in this instance, may or may not result in subsequent changes in the way we do things.

I have, for the purposes of this discussion, simplified matters considerably. The fact that communication is easier by telephone may discourage personal contact. In effect, a virtual environment has replaced a real one. It can be argued that a virtual environment is no less real than a real environment, but that discussion must wait for another occasion. For now, it must simply be acknowledged that virtual environments can have unintended and unwelcome consequences. These may arise from the fact that we no longer have to look each other in the eye when we make decisions.

Thus, it may be wise, when communities are faced with new technological solutions to existing problems, to ask what these techniques may prevent and not only to check what the technologies promise to do. (Franklin, 1992, p. 57)

Consumption, Production and the Democratizing Power of Technology

Once a new technology has been introduced, increased ease and accessibility are usually considered giant leaps forward. The worth of a new technology is measured comparatively and the extent to which something becomes easier and more widely available is the extent to which that technology is valued. This is not always the case – complex scientific technology may have neither ease nor accessibility as its aim – but it is generally true of educational technology. This is because ease and accessibility are linked, and accessibility is fundamental to democracy. For example, easier and more accessible music learning is widely considered a worthwhile and important societal goal.

It is true that music has been democratized time and again by technology. An obvious example is radio. Saturday afternoon Metropolitan Opera broadcasts expanded the art form's audience immeasurably (as have, more recently, HD telecasts). What is democratized in this instance is

music consumption. Now that conventional technologies have been left behind, interactive technologies that supplement or replace passive technologies democratize production. It is this development that continues to have a radical impact on music education.

It is important to be reminded at this point that the objectives of education are not historically rooted in production and consumption or in supply and demand. Hence, the kinds of technology appropriate to industry and commerce may not be appropriate to teaching and learning. Franklin warns that while economic and other forces favour increasing divisions of labour in industry and government, this model is aberrant to education. Growth parameters (which combine functions into an organic whole), not design parameters (which break functions into component parts) are consistent with the aims of teaching and learning.

Yet all of us who teach know that the magic moment when teaching turns into learning depends on the human setting and quality and example of the teacher – on factors that relate to a general environment of growth rather than on any design parameters set down externally. If there ever was a growth process, if there ever was a holistic process, a process that cannot be divided into rigid predetermined steps, it is education. (Franklin, 1992, p. 29)

Divisions of Labour

I have often discussed divisions of labour in the world of music (2003, 2005, 2007). These discussions take on new meanings in light of technology. Percy Grainger's view that "role distinctions between creator, performer and listener . . . are consequences not of different genetic endowment, but of the division of labour in society" (Blacking, 1987, p. 21; see also Grainger, 1982, p. 74) has been partly vindicated by technology. Composing, in particular, is not the mysterious art it once was (Hoffmann, 1991; Beckstead, 2001). It has found a home at home in bedroom and basement studios and in the classroom. Lucy Green's concern that "The more highly specialized is the division of labor generally, the more likely it is that music will also become a specialized sphere of action – listened to and enjoyed by many, but practiced by only a few" (2003, p. 263) seems less relevant today than even a few years ago because of the democratizing power of technology.

It is no coincidence that "divisions of labour" arise frequently in discussions of music, and of technology and specifically of music technology. Franklin cautions that technology is what made divisions of labour possible in the first place and that this force may not be benign (1992, p. 19 ff, p. 63 ff). This contrasts with Gershenfeld's enthusiastic endorsement of technology in his popular book, *When Things Start to Think*. Gershenfeld agrees with Grainger and Green that, "Classically, music has had a clear division of labor. The composer puts notes on a page, the [performer] interprets the shorthand representation of the composer's intent by suitable gestures, and the instrument turns those gestures into sounds" (1999, p. 33). Technology can, according to Gershenfeld, integrate these once-discrete processes. Grainger, Green and Gershenfeld say basically the same thing – that, in western music, traditionally one person composes and another performs, one person performs and another listens. Because of new technologies, one person with one computer and the right software can do it all.

There is another reason why technology makes music production more democratic. It makes reading music less relevant than it has been for centuries. For many students, creativity can be given freer reign when notation neither precedes nor follows making music. This is true, not only because learning to decipher notation has nothing to do with learning to create or perform music (completely different skill sets are involved), but also because the imprecise nature of musical notation is a limiting factor for most non-expert musicians. Expert musicians can hear the music beyond the notes. Non-expert musicians cannot hear the music because of the notes. Technology fosters inclusiveness by obviating the need to read music and more and more people are able to make convincing and even sophisticated music using technology. Technology is a means – perhaps the best means – of returning music making to the people after its appropriation by cultural industries in the nineteenth and twentieth centuries.

This transformative outcome of music technology has far-reaching implications. It undermines western classical music's pride of place as the benchmark against which other musics are measured. It shifts emphasis in classroom music and in home music making from performing to composing. Because of technology, composing can now supersede performing as the preferred means of music teaching and learning (Théberge, 1997, p. 184; Beckstead, 2001). This addresses Christopher Small's concern from a quarter century ago that emphasis on reading music notation in schools assigns more weight to receiving than to creating music (pp. 30-31).

Technology and Collaborative Learning

Not all transformative outcomes of technology favour more music – whether creative or re-creative – in schools. The ease with which collaborative learning now occurs because of technology is a case in point. The benefits of learning together are well known.

In the process of collaborating, students gain experience in negotiating the purpose of their work, the meanings of the terms they use, and so on. . . . Collaborative work also has advantages in terms of motivation: students get involved in tasks because they like to work together; further, if difficulties encountered are temporarily daunting to one student, another student's enthusiasm can carry the work forward.... Students of different ability levels can work together, taking roles commensurate with their skills. Thus, it becomes feasible to teach heterogeneous groups of students who vary in age, ability levels, or expertise. (Means, 1994, p. 7; see also Koenig, 1997, p. 32)

Collaborative learning is one area in which music has long held sway over other content disciplines. In choirs, bands and orchestras, students work together to achieve common goals. There must be agreement on tempo, rhythm, dynamics, phrasing and intonation. A successful whole is an amalgam of successful parts, and social responsibility is instilled in conscientious students. A conductor makes decisions on behalf of the group in professional contexts, but best practice encourages discussion and consensus in pedagogical contexts. Regrettably, many school choirs, bands and orchestras do not learn collaboratively. They take instruction from the conductor and negotiated outcomes are few and far between. It is not surprising that, as a

means of collaborative learning, music is being supplemented or replaced by technologies that allow for real-time and time-shifted teamwork between and across content disciplines.

Here we have two different outcomes of music education technology. In the first example, technology bridges divisions of labour in making music. This, from the standpoint of music education, is a good thing. In the second example, technology makes collaborative learning easy across content disciplines. This, from the standpoint of music education, may be a bad thing. It means that the special place music has traditionally occupied within the curriculum can be challenged.

Tasks and Outcomes, Messages and Meanings

These outcomes raise questions about what is and is not in the interests of student learners. How do we determine what is, not just easier and different, but better for them? This, of course, must be determined contextually. In certain instances, it is easier to use a drum machine than a drummer, and one is unquestionably different from the other. A drum machine may be better than a drummer (e.g. it is cheaper, steadier and more even-tempered). A drum machine may not be better than a drummer (e.g. it is unbending, monotonous and puts people out of work). If the goal is expediency a drum machine makes sense. If the goal is a band that swings a drummer makes sense.

Once we have determined that a particular technology allows easier and/or different outcomes to occur, and once we have confirmed that easier and different are, in a given instance, better (which is not always the case), a final test of a technology's efficacy involves a human cost/benefit analysis. An out-of-work drummer is only the most obvious human casualty of music technology. One of Franklin's central themes is that, while a product may be acceptable and the consumer happy, the citizens who create the product may be unchallenged and disenfranchised.

The literature exploring technology's role in making life easier, better and different is often biased in favour of people or machines. Once the literature that takes sides for or against – that regards technology as a panacea or a threat – or that simply explains how it works is set aside, studies of technology's transformative messages and meanings are surprisingly sparse. It is incumbent upon us as educators not only to evaluate the uses of technology – to extol its virtues and denounce its failings – but also to explore deeply how it encourages or causes us to think differently about the world around us. There are messages implicit in technology that have to do, not with tasks and outcomes, but with beliefs and values. It is these messages that are most relevant of all to music education.

Conclusions

Peters, almost twenty years ago, observed that,

Technology has served as a means to change attitudes and values, while it also shapes our approaches to problem solving and to expression. Many older, traditional means for expressing attitudes and emotions have been replaced or expanded by technological innovation. (1991, p. 237)

In the classroom, the place of music – certainly a “traditional means for expressing attitudes and emotions” – may be weakened or strengthened by educational technology. Over time, technology may become less a means to learn about and disseminate music, and music may become more a means to learn about and disseminate technology. If technology is indeed the message, then music, along with other content disciplines, becomes the means. In our McLuhanesque world, the medium that is the message, the universal language of our time is technology. The great French sociologist Jacques Ellul noted this phenomenon over a half-century ago (1964, p. 132). The subsequent e-tech revolution has proved him right and transformed irrevocably the way we live.

Fortunately, the universality of music and the universality of technology are not mutually exclusive. This is not an either/or proposition. We must be careful, however, to distinguish between the appeal of music generally and the limited appeal of specific musics. This is no different from distinguishing between the appeal of technology generally and the limited appeal of specific technologies. Cultural, demographic, national, and other factors including race and gender determine the appeal of one music or one technology over another. Yet, as Jonathan Stephens maintains, on a broader and pluralistic level, “Historically the arts – with their universal voices that echo across time and place – are well situated to promote the human face of education” (2005, p. 248). For this reason music education can never be usurped by technology, although it can be enhanced, supplemented and sometimes undermined by it. The benefit and value of music teaching and learning, like the benefit and value of technology, remains constant, while the means and meanings of music and technology evolve over time.

Notes

A preliminary version of this paper was presented to the EAS (European Association for Music in Schools) Congress/ ISME European Regional Conference, Luleå University (Piteå, Sweden), May 2007.

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